

WHAT IS CLAIMED IS:

1. A protein of the following (a) or (b):
 - (a) a protein comprising an amino acid sequence of SEQ ID NO: 2; and
 - (b) a protein comprising an amino acid sequence of SEQ ID NO: 2 with one or several amino acids deleted, replaced, or added, and having an activity of binding rabconnectin-3 and a GDP/GTP exchange protein.
2. A protein according to claim 1, which has the amino acid sequence of SEQ ID NO: 2.
3. A polynucleotide for encoding the protein as defined in claim 1 or 2.
4. A polynucleotide according to claim 3, comprising a nucleotide sequence of nucleotide numbers 1 to 4470 of a nucleotide sequence of SEQ ID NO: 1.
5. A polynucleotide of the following (a) or (b):
 - (a) a polynucleotide comprising a nucleotide sequence of nucleotide numbers 1 to 4470 of a nucleotide sequence of SEQ ID NO: 1; and
 - (b) a polynucleotide which hybridizes with the polynucleotide comprising a nucleotide sequence complementary to the nucleotide sequence of nucleotide numbers 1 to 4470 of the nucleotide sequence of SEQ ID NO: 1 under a stringent condition, and encodes a protein having an activity of binding rabconnectin-3 and a GDP/GTP

exchange protein.

6. A polynucleotide of the following (a) or (b):

(a) a polynucleotide comprising a nucleotide sequence of nucleotide numbers 1 to 4470 of a nucleotide sequence of SEQ ID NO: 1; and

(b) a polynucleotide comprising a nucleotide sequence whose homology to the nucleotide sequence of nucleotide numbers 1 to 4470 of the nucleotide sequence of SEQ ID NO: 1 is 80% or higher and encoding a protein having an activity of binding rabconnectin-3 and a GDP/GTP exchange protein.

7. A recombinant vector comprising the polynucleotide as defined in any one of claim 3 to 6.

8. A transformant obtained by transforming a host with the polynucleotide as defined in any one of claim 3 to 6.

9. A method of producing a protein having an activity of binding rabconnectin-3 and a GDP/GTP exchange protein, comprising:

culturing the transformant as defined in claim 8; and
collecting, from a culture, the protein having the activity of binding the rabconnectin-3 and the GDP/GTP exchange protein, expressed by the transformant.

10. A use of a probe or a primer comprising a

polynucleotide having at least 15 nucleotides complementary to the polynucleotide as defined in any one of claim 3 to 6, which is adapted to detect the polynucleotide as defined in any one of claim 3 to 6.

11. A method of analyzing the polynucleotide as defined in any one of claims 3 to 6, comprising hybridizing a probe or a primer including a polynucleotide having at least 15 nucleotides complementary to the polynucleotide as defined in any one of claim 3 to 6 with a subject polynucleotide.

12. An analyzing method according to claim 11, wherein the subject polynucleotide is present in a subject tissue or a subject cell.

13. A method of analyzing a gene encoding the protein as defined in claim 1 or 2, comprising hybridizing a probe or a primer including a polynucleotide having at least 15 nucleotides complementary to the polynucleotide as defined in any one of claim 3 to 6 with a subject polynucleotide.

14. A method of analyzing a gene according to claim 12, wherein the subject polynucleotide is present in a subject tissue or a subject cell.

15. A method of analyzing a gene, comprising the steps of:

amplifying an mRNA in a subject tissue or a subject cell by an RT-PCR method with a primer including a polynucleotide having at least 15 nucleotides complementary to the polynucleotide as defined in any one of claim 3 to 6, and

measuring the polynucleotide as defined in any one of claim 3 to 6.

16. An antisense polynucleotide which hybridizes with an mRNA encoding the protein as defined in claim 1 or 2.

17. A ribozyme for cutting an mRNA encoding the protein as defined in claim 1 or 2.

18. A double-stranded RNA for cutting an mRNA encoding the protein as defined in claim 1 or 2 by RNA interference.

19. An antibody against the protein as defined in claim 1 or 2.

20. A method of immunohistologically analyzing the protein as defined in claim 1 or 2, which uses the antibody as defined in claim 19.

21. An analyzing method according to claim 20, wherein the analyzing method comprises analyzing localization of a protein.

22. An analysis method according to claim 20, wherein the analyzing method comprises analyzing an amount of expression of a protein.

23. A method of screening a candidate material of a material for promoting or inhibiting binding between a rabconnectin-3-binding protein which is the protein as defined in claim 1 or 2 or a heterogenous homologous protein thereof, and a rabconnectine-3, comprising the steps of:

reacting the rabconnectin-3-binding protein with the rabconnectin-3 in the presence and absence of the candidate material, and

selecting the candidate material which increases or decreases the binding.

24. A method of screening a candidate material of a material for promoting or inhibiting binding between a Rab GDP/GTP exchange protein-binding protein which is the protein as defined in claim 1 or 2 or a heterogenous homologous protein thereof, and a Rab 3 GDP/GTP exchange protein, comprising the steps of:

reacting the Rab3 GDP/GTP exchange protein-binding protein with the Rab3 GDP/GTP exchange protein in the presence and absence of the candidate material, and

selecting the candidate material which increases or decreases the binding.